RECEIVED
CENTRAL FAX CENTER
JUN 08 2007

REMARKS

The foregoing amendment amends claims 2, 3, 4 and 9. Now pending in the application are claims 1-9, of which claim 1 is independent. Claims 5-8 have been previously withdrawn. The following statements address all the ground for rejection and place the pending application in condition for allowance.

Claim Amendments

Applicants amend claims 2, 3, 4 and 9 to delete the language "is adapted to." No new matter is added.

Amendments to Specification

Applicants amend the specification to correct the reference numeral associated with the Electric Control Device on page 9. Applicants further amend the specification on page 13 to delete the repeated use of the language "the fuel gas" in the same sentence. No new matter is added.

Rejection of claims under 35 U.S.C. § 103

Claims 1-4 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0136942 to Kashiwagi (hereafter "Kashiwagi") in view of Japanese Patent Application Publication No. 2002-33110A to Kobayashi et al. (corresponding to U.S. Patent No. 6,844,094; hereafter "Kobayashi").

The Kashiwagi reference teaches a fuel cell system having an ejector 6, provided in the hydrogen gas supply passage 12, and a recirculation pump 11, provided in the recirculation passage 5B, and a controller 20, connected to the recirculation pump 11. *See* Fig. 1. The recirculation pump 11 is driven by an electric motor [0025]. However, the Kashiwagi reference does not teach or suggest *a discharge valve for discharging fuel off-gas from the fuel off-gas circulation path* and *a control device operatively connected to the discharge valve*, as required by independent claim 1.

The Kobayashi reference teaches a fuel cell system having a hydrogen-circulating pump 33, provided in the hydrogen supplying apparatus, and a three-way valve 34 in the hydrogen

recirculation passage. *See* Fig. 1. The hydrogen-circulating pump 33 is composed of an ejector, and utilizes a flow of the supply hydrogen H towards the anode side of the fuel cell 1 to suck the supply hydrogen H having been used in the fuel cell 1. *See* Col. 6, line 65 to Col. 7, line 1. The three-way valve 34 is composed of a passage switch and it switches the passage of the exhaust hydrogen H to the discharge portion or circulation position. *See* Col. 7, lines 7-15. The Kobayashi reference also teaches a controller 4 that sends signals to the humidifier 23, the valve 23 for controlling the negative pressure, the suction pump 24, and valve 25 for controlling a discharge pressure. However, valve 25 controls the discharge of exhaust air, and not hydrogen off-gas in the hydrogen recirculation passage. *See* Fig. 1. Furthermore, the suction pump 24 of the Kobayashi reference is an air pump and not a fuel pump. The fuel pump 33 of the Kobayashi reference is not connected to the controller 4. *See* Fig. 1. In contrast, claim 1 requires that a control device operatively connected to *the fuel pump and to the discharge valve for discharging the fuel off-gas from the fuel off-gas circulation path.*

According to claim 1, both the fuel pump (hydrogen pump) and the discharge valve are controlled by the control device. Therefore, as illustrated in the flowchart shown in Applicants' Figs. 5 and 6, it is possible to operate the fuel pump at starting of the fuel cell system, and it is also possible, when the cell voltage is low, to open the discharge valve so that impure substance such as nitrogen gas in the fuel off-gas circulation path is discharged, and so that the cell voltage can be rapidly raised. The Kashiwagi reference does not teach or suggest controlling a hydrogen pump or a discharge valve. The Kobayashi reference teaches operating a hydrogen pump at starting of the fuel cell power plant. However, the discharge valve is not controlled. Therefore, the power generation performance will be degraded.

Claims 2-4 and 9 depend from claim 1 and, as such, incorporate each and every element of claim 1. With regards to claim 2, the Kobayashi reference further teaches a cell voltage sensor for detecting a cell voltage. *See* Col. 9, lines 38-40. However, the Kobayashi reference does not teach or suggest how the discharge valve is controlled in view of the voltage detected by voltage measuring device, as required by claim 2.

With regards to claims 3 and 4, Applicants' Fig. 6 illustrates a flowchart where the control operation is carried out depending on the nitrogen concentration. The state-of-load of the fuel pump (hydrogen pump) is measured by the pump current measuring sensor 27, and the state-of-load of the fuel pump is converted into nitrogen concentration using the diagram shown

in Applicants' Fig. 7. Applicants respectfully submit that the Kobayashi reference does not teach or suggest a state-of-load measuring device, connected to the control device, for measuring a state-of-load of the fuel pump, as required by claims 3 and 4.

With regards to claim 9, the Kobayashi reference does not teach or suggest how the control device controls the discharge valve. In the Kobayashi reference, the anode side of the fuel cell is not controlled by a controller. There is no hydrogen pump that is operated by a rotating machine such as an electrical motor. The ejector is mechanically operated. The Kobayashi reference teaches that hydrogen can be discharged by operating the three-way valve. However, the Kobayashi reference does not teach or suggest that the three-way valve is controlled by a controller, or when the three-way valve is opened and closed. The Kashiwagi reference teaches that the hydrogen pump is controlled at starting of the fuel cell power plant. However the Kashiwagi reference does not teach or suggest a hydrogen discharge valve and thus, the Kashiwagi reference does not teach or suggest a hydrogen valve controlled by a controller.

In light of the foregoing arguments, Applicants respectfully submit that the Kashiwagi reference, in view of the Kobayashi reference, fails to teach or suggest each and every element of claims 1-4 and 9. Applicants respectfully request the Examiner to reconsider and withdraw the rejection of claims 1-4 and 9 under 35 U.S.C. §103(a) and pass the claims to allowance.

Application No.: 10/714,065 Docket No.: SIW-069

CONCLUSION

In view of the above comments, Applicants believe the pending application is in condition for allowance and urge the Examiner to pass the claims to allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. SIW-069. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. §1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: June 8, 2007

Respectfully submitted,

By _____
Anthony A. Laurentano
Registration No.: 38,220
LAHIVE & COCKFIELD, LLP
One Post Office Square
Boston, Massachusetts 02109-2127
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant